

REMARKS

This Amendment is responsive to the Office Action mailed April 28, 2004. Following entry of this Amendment, claims 1-10, 18-27, 37-39, and 41 are pending in this application. Applicants respectfully request reconsideration of this application.

Claim Status

The status of claims 39 – 41 is unclear due to discrepancies between the Office Action mailed April 28, 2004 and the accompanying Office Action Summary.

In regard to claim 39, the Office Action Summary indicates that claim 39 was rejected by the Examiner, along with all of the pending claims 1-10, 18-27, and 37-41. Page 10 of the Office Action states that claim 39 is allowed.

In regard to claims 40 – 41, the Office Action Summary indicates that claims 40 – 41 were rejected by the Examiner. Claims 40 – 41, however, are not mentioned in the body of the Office Action either as rejected or allowed.

Applicants therefore respectfully request clarification of the status of claims 39 – 41.

Rejection Under 35 U.S.C. 103

Claims 1-6, 9-10, 12-23, 26-27, 29-32 and 35-38 were rejected under § 103 as being obvious over U.S. Patent No. 6,222,567 to Schuster et al. in view of U.S. Patent No. 6,080,993 to Zwijsen. The Office Action states that Schuster et al. reports all claimed features with the exception of providing substantially coextensive contact along the width of a portion of the acceptor element. The Office Action further states that Zwijsen reports substantially coextensive contact along the width of a portion of the acceptor element for the purposes of detecting the beginning of a dye donor element and distinguishing variants of color dye donor elements. Finally, the Examiner asserts that a person of ordinary skill in the art would have been motivated to utilize substantially coextensive contact in Schuster et al. based on Zwijsen for the purposes of detecting the beginning of a dye donor element and distinguishing variants of color dye elements. In response to the arguments previously made

by the Applicants, the Examiner asserts that Schuster et al. in view of Zwijsen discloses a non-stationary printhead.

The claimed invention generally includes a cylindrical drum onto which an acceptor element is affixed, a dispensing roller, a receiving roller, a donor sheet extending between the dispensing and receiving roller, a plurality of contact rollers configured to bring the donor sheet into coextensive contact with the acceptor element, and a laser imaging head that moves along the longitudinal axis of the drum relative to the donor sheet and acceptor sheet. The laser imaging does not contact the donor sheet or acceptor sheet. One important benefit to this arrangement is that the acceptor element may be completely imaged after only a single revolution of the cylindrical drum.

Schuster et al. provides a method of producing a thermal transfer print on a substrate cylinder using a tape-like transfer film. Schuster et al. reports a tape transport mechanism including a supply roll 4 and a rewind roll 5 having associated drives 4a and 5a, two contact rolls 6a and 6b, and two guide rolls 7a and 7b, which lead a tape-like transfer film or tape 8 into contact with a substrate cylinder 1 (Col. 3, lines 49-58). A laser writing head focuses one or more beams onto the transfer tape 8. Furthermore, as shown in Figure 2 of Schuster et al., the laser writing head and the tape guide mechanism 4, 4a, 5, 5a, 6 and 7 *are jointly arranged on a traversing unit 3* such that they can be moved over the width B of substrate cylinder 1. During imaging, the transfer tape 8 is brought into contact with the surface of the substrate cylinder by the contact rolls 6a and 6b (Col. 3, lines 65-66). In contrast to the claimed invention which images an acceptor element in a single revolution, the traversing unit reported in Schuster et al. images only a single narrow band during each revolution of the cylindrical drum. Thus, the system reported in Schuster et al. is less efficient than the claimed invention.

Zwijsen reports a thermal printing system that includes a *stationary* print head 60 (Col. 3, line 60), a dye donor element that includes one or more dye frames, a receiver, and means for moving the dye donor element and receiver along respective paths so as to move a dye frame and the receiver relative to the print head (Col. 2, lines 31-37). The dye donor element may include a continuous dye frame, as shown in Figure 2 of Zwijsen, or a series of repeating dye frames, as shown in Figure 1b of Zwijsen. According to Zwijsen, when one

dye donor element contains more than one dye frame, it is important to identify when a different dye frame comes under the print head (Col. 2, lines 8-10). To identify the type of dye donor element and the type of dye frame positioned on the thermal printing system, a detecting means is included in the system. (Col. 2, lines 40-42) The detecting means includes detection areas occurring in a margin of the dye donor element (Col. 2, line 49-50). Thus, the width of the dye donor element in Zwijsen is due in part to the location of the detection areas in a margin of the dye donor element.

Applicants respectfully submit that there is no motivation to modify Schuster et al. as suggested by the Office Action because such a modification would render the device reported in Schuster et al. inoperable. As previously noted, the tape guide mechanism, including the contact rolls, and the laser writing head in Schuster et al. are jointly arranged on a traversing unit so that the transfer tape can be moved along the substrate cylinder width by the movement of the traversing unit. This is necessitated by the fact that the donating ribbon is significantly narrower than the acceptor sheet. However, if the donating material of Schuster et al. were modified to have a width similar to the acceptor sheet, the joint traversing arrangement between the donating material and the laser head would be rendered inoperable. Specifically, the donating material could not be effectively traversed along the carriage as reported in Schuster et al. if it already had a comparable width to the acceptor sheet.

Applicants also submit that there is no motivation to modify Schuster et al. as suggested by the Examiner because the reason for providing a dye donor element of comparable width to the receiver in Zwijsen is not present in Schuster et al. As previously stated, the Examiner asserts that Zwijsen discloses substantially coextensive contact along the width of a portion of the acceptor element for the purposes of detecting the beginning of a dye donor element and distinguishing variants of color dye donor elements. However, since the transfer tape of Schuster et al. is not described as including multiple dye frames on a single transfer tape, a detecting means to detect the beginning of the of the ink-accepting coating and to distinguish variants of color dye is not needed in the method described in Schuster et al. Therefore, Applicants respectfully submit that one skilled in the art would not be motivated to modify Schuster et al. in view of Zwijsen.

Even if Schuster et al. is modified according to the Office Action, the claimed invention is still not rendered obvious. Independent claims 1, 18 and 40 recite a laser-induced thermal transfer printer that includes a laser imaging head which is adapted to move parallel to a longitudinal axis *relative to the donor sheet and acceptor element*. However, neither Schuster et al. nor Zwijsen report a laser imaging head that moves relative to a donor sheet and acceptor element. As previously described, Schuster et al. reports a laser writing head and a tape guide mechanism that are jointly arranged on a traversing unit so that the transfer tape can be moved along the substrate cylinder width by the movement of the traversing unit. In this configuration, the movement of the laser writing head is not relative to the transfer tape. Zwijsen reports a stationary print head and means for moving the dye donor element and receiver along respective paths so as to move the dye donor element and the receiver relative to the print head. In this configuration, the print head does not move relative to the dye donor element and in fact also appears to contact the dye donor element, unlike the claimed invention.

In view of these arguments, Applicants respectfully request withdrawal of this rejection.

Claims 7, 8, 24, 25 and 33-34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schuster et al. in view of Zwijsen and U.S. Patent No. 6,291,143 to Patel et al. More particularly, the Office Action stated that Patel et al. includes a photothermal converter and that it would have been obvious to modify the combination of Zwijsen and Schuster et al. to include a photothermal converter.

Patel et al. reports a thermal imaging element including a photothermal converting dye. However, Patel et al. does not discuss thermal imaging apparatuses, and thus, does not provide any motivation to combine Schuster et al. and Zwijsen as asserted by the Examiner. Therefore, Applicants reiterate their above remarks that there is no motivation to combine Schuster et al. and Zwijsen, and respectfully request withdrawal of this rejection.

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CONCLUSION

The pending claims are in condition for allowance. Applicants respectfully request a notice to that effect. If there are any remaining questions, the Examiner is requested to contact the undersigned at the number listed below.

Respectfully Submitted,

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